WPS3896

REGIONAL LABOR MARKET DEVELOPMENTS IN TRANSITION

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Abstract

We analyze regional labor market disparities in transition by presenting some data and summarizing existing literature. We find that large and persistent regional labor market disparities developed in virtually all transition countries and that there is some evidence of polarization. Differences in starting conditions and market access seem to be the major reasons for regional divergence in transition. Furthermore, regional wages are only slightly more flexible than in many EU labor markets, inter-regional migration is low and capital seems to move towards high wage and low unemployment urban centers rather than to the most backward regions. Policy should thus take a long-run perspective on the existing regional disparities, focus on removing barriers to mobility, review existing institutions for implementing regional policy and aim at a close co-ordination of regional and labor market policy instruments.

World Bank Policy Research Working Paper 3896, April 2006

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1 This paper was prepared as a background paper for the ECA regional study Enhancing Job Opportunities: Eastern Europe and the Former Soviet Union The author would like to thank Jan Rutkowski and Stefano Scarpetta for helpful comments, Fabian Bornhorst, Simon Commander, Iulia Traistaru and Barbara Ziolkowska for sharing their data and Andrea Grabmayer, Andrea Hartmann and Maria Thalhammer for providing helpful research assistance.

Introduction

Over the past decade the transition countries experienced significant structural change due to the transition to a market economy and increased integration in the world economy. In virtually all of these countries this led to a substantial increase in regional disparities. Starting from a situation of an extremely equal distribution of economic activity as measured for instance by employment rates and wages during socialism, the transition economies developed regional disparities which parallel or even exceed those of many European economies.

This development raises a number of issues relating to the causes for regional disparities, the efficiency of labor market mechanisms such as wage flexibility, migration and new firm creation in equilibrating regional labor markets and appropriate policies to deal with the uneven development of regions in transition. Assessing the differences and similarities in regional labor market conditions in transition countries, as well as the ability of labor markets in transition to deal with regional disparities, is of primary importance from an economic point of view for a number of reasons. First regional mismatch of workers and work opportunities may be a cause of high and persistent unemployment in some countries. Thus policies designed to enhance regional adjustment may be an important contribution to combating national unemployment. Second, in many countries substantial funds are devoted to subsidizing poorer regions with the aim of reducing regional disparities. This raises the issues whether efficiency of regional policies can be increased.

Furthermore, with the accession of a number of countries to the European Union (EU) in May 2004 and the envisioned further enlargement a number of further policy issues arise. These concern the use and administration of EU structural funds, the optimal timing of accession to the European Monetary Union and the end of derogation periods for freedom of movement of labor and services in accession. Analyzing regional developments in the new member states, can provide important insights on each of these issues. For instance, analyzing regional labor market adjustment mechanisms can provide insights both on the flexibility of labor markets, which is important for an assessment of the viability of monetary unions as well as on the appropriate regional policy measures to combat regional disparities.

Finally, high and persistent regional disparities may also have political repercussions which go far beyond narrow economic analysis. These may reach as far as the disintegration of existing countries (in particular when disparities are associated with ethnic or national differentials).[2] Thus

[2] For instance Fidrmuc, Horvath and Fidrmuc (1999) argue that the economic reasons for disintegration of Czechoslovakia were high regional disparities between what is now the Czech Republic and Slovakia.

understanding the causes and potential remedies of regional disparities is also of a wider political importance.

This paper focuses on regional labor market developments in transition countries by summarizing both the literature and presenting some data on both the new member states and candidate countries of the EU among transition economies as well as the former Soviet Union countries (in particular Russia). Our focus is on highlighting common trends and problems, while not masking the substantial heterogeneity among the countries considered. In particular we focus on the extent and development of regional disparities in terms of unemployment and employment rates as well as differences in income between regions.

After a short description of the data and regional breakdown of the countries considered in the next section, section three presents some stylized facts concerning the development of regional labor market disparities in transition and summarizes the findings of the literature concerning the causes for the marked differentiation of living conditions among regions. Section four considers the differences in labor market situation among region types. We find that large and persistent regional labor market disparities developed in virtually all transition countries and that there is some evidence of polarization. Furthermore, differences in starting conditions and market access seem to be the major reasons for regional divergence. Urban centers and border regions have shown better regional development, while rural peripheral and in some countries mono-industrial regions have fared worse.

Section five then considers results on the potential of labor market adjustment mechanisms to equilibrate regional disparities. We find that hopes for regional disparities to diminish automatically through the operation of market incentives seem to be rather bleak. Labor mobility is low in most transition countries, investments primarily go to regions which are already performing better and overall evidence on wage flexibility suggests that wages are only slightly more flexible in most transition economies than in EU labor markets, which are often considered sclerotic and incapable to adjust to asymmetric shocks.

The evidence thus suggests that regional disparities in transition countries in all likelihood reflect long-term influences on regional development and are unlikely to disappear in the short run. Section six thus draws policy conclusions by arguing that in transition economies the classical policy trade off between efficiency and equity – which characterizes much of the regional policy debate in mature market economies - is likely to be more binding. Since low internal migration rates and lacking capital mobility make it unlikely that the population in peripheral regions is going to profit from efficiency oriented policy rapidly. We also argue that in order to tackle the substantial regional labor market

problems in transition, a coherent but regionally differentiated regional policy will be needed and a review of the institutions delivering regional and labor market policy should be undertaken.

Data

The primary focus of this report is on regional labor market developments for the new European Union (EU) member states among the transition economies and the Central and Eastern European (CEEC) accession candidate countries to the EU. The reason for this choice is primarily data availability. The primary data sources for the report are EUROSTAT's New Cronos data base and the Regspec/Acesslab data base (see: Iara et al, 2004 and Iara and Traistaru, 2003). This data covers the new member states of the European Union among the CEEC and two candidate countries (Bulgaria and Romania)

We, however, also focus on regional development in the countries of the former Soviet Union (in particular Russia) by way of a survey of the literature and presenting data provided by Goscomstat and the data used in Bornhorst and Commander (2004).

These data sets provide information for different time periods and different regionalization of the countries considered (see table 1). This causes a number of data and methodological problems which make direct comparisons of individual results across countries and or country groups as well as over time difficult. These problems relate to the differences in regional size and autonomy of regional governments, which suggest that differences between countries may be simply a result of differences in geography and the institutional situation in regions, changes in regionalization during transition, which make intertemporal comparison difficult and to differences in statistical methods and definitions over time and across countries, which also limit the possibility of comparison.

In particular the countries analyzed differ substantially among each other in geography, regional autonomy granted to subnational administrative bodies such as regional governments and their labor market situation (a theme that is stressed in the main report). Thus wide generalizations across countries and country groups may be misleading when attempting to provide policy advice. For instance in some of the smaller countries among the transition countries (such as for instance Slovenia) even first tier regions may cover territories of just over 100.000 inhabitants and some of these regions (as for instance in the case of Slovenia) may not have any regional authorities. By contrast in the larger transition economies in particular in Russia first tier regions may cover territories which exceed the area even of some of the large European Union countries by factor of over 2, extend across a number of climatic zones and enjoy substantially higher regional autonomy, since Russia is a federal state.

Table 1: Data availability and regional breakdown of countries

Country	Tier of regions	Number of regions	Average population per region	Time period for which data is available
Bulgaria	NUTS III	28	309,162	a) 1991-1998 b) 1999-2003
Czech Republic (after 1998)	NUTS III	14	730,314	b) 1999-2003
Czech Republic (before 1998)[1)]	okres	77	137,773	a) 1991-1998
Hungary	NUTS III	20	509,385	a) 1991-1998 b) 1999-2003
Poland (after 1998)	NUTS III	41	792,226	b) 1999-2003
Poland (before 1998	Voivodships	49	779,248	a) 1991-1998
Romania	NUTS III	41	566,017	a) 1991 -1998 b) 1999-2003
Estonia	NUTS III	5	305,306	a) 1991-1998 b) 1999-2003
Latvia	NUTS III	5	470,980	b) 1999-2003
Lithuania	NUTS III	10	348,130	b) 1999-2003
Slovenia	NUTS III	12	165,784	a) 1991-1998 b) 1999-2003
Slovakia (after 1996)	NUTS III	8	667,463	b) 1999-2003
Slovakia (until 1996)	okresy	38	139,646	a) 1991-1998
Russia	Oblast	79	1,823,684	c) 1992, 1995 1998 -2002

Notes: a) RegSpec/AccesLab data base (see Iara et al 2004) includes indicators on wages, unemployment rates and employment as well as population b) New Cronos Database includes indicators on GDP per capita, unemployment rates and employment rates. c) Data supplied by Goskomstat 1) before 1996 only 76 regions, NUTS = Nomenclature of Territorial Units for Statistics

Clearly such extreme heterogeneity among regions will have implications for the findings. They are likely to make comparisons among countries questionable and will have implications for the kind of policy conclusions derived. In particular heterogeneity among regions increases as the regional break down analyzed becomes smaller. For instance any regional disparities analyzed in Slovenia would clearly be missed if regions were made comparable to Russian territories. Furthermore, it should be evident that the policy advice given to a say a Siberian region in the Russian Federation which covers three climatic zones, commands substantial natural and administrative resources and is characterized by extremely low population density, would differ widely from that given to an new member state region such as a Slovenian region with quite different locational advantages and rather limited administrative autonomy.

A further data problem in particular in the European candidate countries and the new member states of the EU is that the regional divisions in these countries were repeatedly reformed during transition. This leads to complications in comparisons of regional disparities over time. For instance in the Slovak Republic the current Nomenclature of Territorial Units for Statistics (NUTS) II and NUTS III regions replaced the old system and the pre-existing 38 third tier regions were abolished and 76 new regions were introduced, so that data pre- and post 1996 cannot be made comparable. Furthermore, in Poland a new regionalization – which is incomparable to previous regions - was introduced in 1998. In

other cases we were able to overcome the changes in regionalization since at least the lowest tier regions remained unchanged and comparisons can either be conducted at this lower tier level (as in the Czech Republic)[3] or some data could be aggregated from lower tier level data (as in Slovenia before 1996). The most distinct break in our data is that between the data from official Eurostat sources and the privately compiled AccessLab/Regspec data set, while the first provides consistent information for most candidate countries and new member states from the end of the 1990s onwards at the NUTS II and III level, the second provides information from the early 1990s to the late 1990s. Since Eurostat data must be considered more reliable and comparable, we do not attempt to merge the two data sets but provide statistics from the early 1990s from the RegSpec/AccessLab data base and take data from 1999 to the latest available from Eurostat.

Finally, data across countries and time are not always defined in equivalently and harmonization of regional information on individual countries has progressed less far than data on the national level.[4] Although we focus only on a very limited set of indicators in this study (which consists of unemployment rates, participation rates, GDP and wages for the new EU member states and candidate countries and exclusively unemployment rates for FSU countries) this may have implications when comparing data across countries in particular to the degree that administrative data such as registered unemployment are influenced by national institutions.

While conscious of the problems associated with data, our approach to these problems in this report is pragmatic. Our main aim is to use the data available to highlight some of the common features of regional development by which transition countries have been characterized from a "bird's eye" perspective. Furthermore, since this clearly holds the danger of over generalizing heterogeneous developments, we augment our own data analysis with literature surveys of more detailed individual country studies or cross-country comparisons in order to highlight the substantial heterogeneity, which undoubtedly exists among candidate countries.

Some Stylized Facts on Regional Development in Transition

Large and stable but increasing regional disparities

Despite the difficulties in comparing data across countries and time a number of similarities in regional development exist among transition countries. In particular regional disparities in transition

[3] However, even this comparison is made difficult by the introduction of an additional region in 1996 in the Czech Republic.

[4] These caveats are most relevant for data on the early transition period, and are documented in more detail in Iara et al, 2004. We omit this description here, for reasons of brevity of the report.

countries are large, have increased over time and have led to stable distribution of "winners" and "losers" among regions.

Table 2: Indicators of regional labor market disparities in transition economies at NUTS III level

Registered Unemployment Rate 2003

	Average	Minimum	Maximum	Coefficient of variation	Capital city region
Bulgaria	-	-	-	-	-
Czech Republic	7.5	4.2	14.8	0.401	4.2
Hungary	6.3	3.3	11.3	0.311	3.6
Poland	20.1	8.5	33.4	0.258	18.3
Romania[1])	7.0	5.9	8.6	0.148	-
Estonia	10.6	0.4	17.4	0.322	9.0
Latvia	10.4	8.2	15.4	0.227	10.8
Lithuania	12.3	7.5	16.9	0.204	11.7
Slovenia	7.3	4.7	10.2	0.298	4.7
Slovakia	17.2	7.1	23.9	0.363	7.1
Russia (2002)	8.0	1.4	44.0	0.563	1.4

GDP per capita 2001(In Euro)

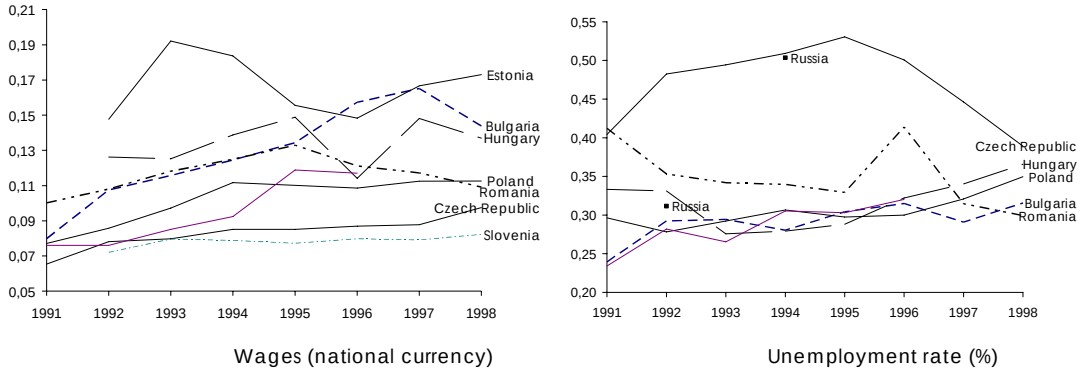
	Average	Minimum (% of average)	Maximum (% of average)	Coefficient of variation	Capital City region
Bulgaria	1,669.3	71.4	214.9	0.2692	214.9
Czech Republic	6,233.3	81.9	238.5	0.3875	238.5
Hungary	4,854.8	65.5	237.0	0.3656	237.0
Poland	4,843.3	67.2	229.2	0.3407	-
Romania	1,891.4	60.2	164.3	0.2292	164.3
Estonia	4,041.5	65.8	192.2	0.4657	192.2
Latvia	-	-	-	-	-
Lithuania	3,424.6	67.9	155.5	0.2417	155.5
Slovenia	9,976.0	78.2	152.5	0.1868	152.5
Slovakia	4,386.3	59.3	214.7	0.4470	214.7
Russia	-	-	-	-	-

Employment rate 2000(in % of total population)

	Average	Minimum	Maximum	Coefficient of variation	Capital city region
Bulgaria	35.61	31.40	42.62	0.0778	42.6
Czech Republic	45.24	40.42	58.29	0.0964	58.3
Hungary	36.90	28.53	51.01	0.1507	51.0
Poland	37.67	28.67	52.27	0.1362	-
Romania	-	-	-	-	-
Estonia	39.69	35.67	48.93	0.1199	48.9
Latvia	42.66	35.66	47.14	0.0927	47.1
Lithuania	41.43	38.10	48.82	0.0710	48.8
Slovenia	-	-	-	-	-
Slovakia	37.19	30.78	57.58	0.2131	57.6
Russia	41.10	22.14	53.18-	0.1401	48.2

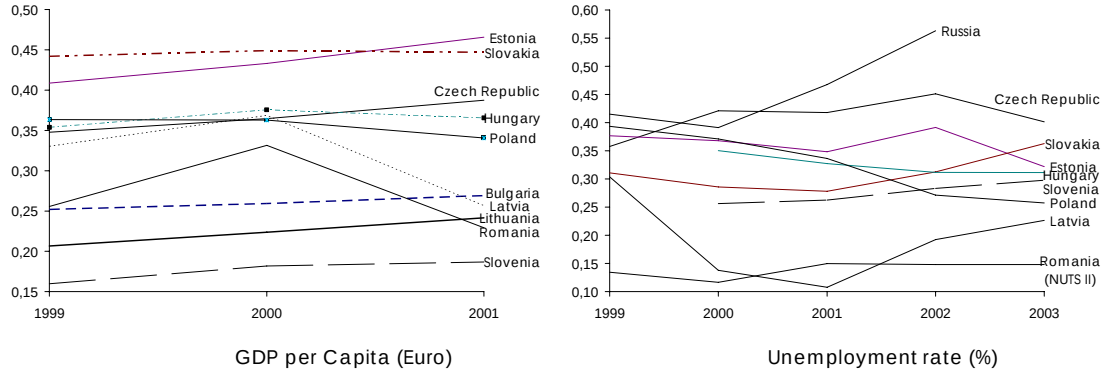
Source: Eurostat, New Cronos and Goskomstat. – [1]) Nuts II.

Figure 1: Coefficient of variation in wages and registered unemployment rates in transition countries 1991/2-1998



Source: Regspec/AcessLab data base.

Figure 2: Coefficient of variation in GDP per capita and unemployment rates in transition countries 1999-2001 (NUTS III)



Source: Eurostat, New Cronos and Goskomstat. – Romania at Nuts II level.

Indeed regional disparities in unemployment rates, employment rates and GDP per capita levels are comparable to those in many of the high unemployment countries in the EU. This is documented in Table 2 which uses the most recent data available from the New Cronos database. Differences between the regions with the highest and the lowest unemployment rate exceeded a factor of 3 in the year 2003 in all but the smallest transition countries (Slovenia, Latvia, Lithuania) and Romania. GDP per capital levels ranged from 70 - 80% to up to over 200% of the national average in the majority of transition economies. Finally, differences between the regions with the maximum and minimum employment

rates ranged from over 10 percentage points to over 25 percentage points at the NUTS III level of regional aggregation.[5]

The development of these sizeable disparities is closely linked to the process of transition. In socialist times regional disparities in wage and employment rates tended to be small. For instance as shown by Huber and Palme (2001) the ratio of regions with the highest wages relative to that to the lowest ranged at about 1.3 in the Czech Republic and at around 1.2 in Slovakia in the 1980s; once market oriented reforms were undertaken regional disparities quickly increased. To illustrate this, figures 1 and 2 display the coefficient of variation in regional unemployment rates and wages for a selection of European transition economies for the time period from 1992 to 1998 using the Regspec/AccessLab data set and of unemployment rates and GDP for the period from 1999 using the EUROSTAT's New Cronos data base.[6]

As can be seen, the divergence of regions was particularly pronounced in the early transition period in terms of wage levels which, when measured by the coefficient of variation, increased by over 50% in countries such as Slovakia, Poland, the Czech Republic and Bulgaria and somewhat more modestly in Hungary, Slovenia and Estonia.[7] The only exception to this rule is Romania, where regional wage disparities in 1991 were about the same as in 1998. Furthermore, regional disparities in per capita GDP levels are still increasing in many of the transition countries for which we have data. Romania and Latvia were the only countries which had lower GDP disparities in 2001 than in 1999 in all other countries regional disparities increased or stagnated (Hungary, Slovakia, and Poland) in the last three years (see figure 2).[8]

Regional unemployment rates by contrast showed a less pronounced divergence in early transition. Here too, however, there has been a clear tendency of divergence in the majority of transition economies such as Poland, Bulgaria and most pronouncedly in Russia where, however, only two

[5] There is also evidence of potentially even larger regional disparities for countries not covered in our data. For instance Babetski, Kolev and Maurel (2004) note that for the Kyrgyz Republic ILO unemployment rates among the six regions of the country range from 13.1% to 45.9% in 1997 and 11.9% to 49.5% a year later.

[6] We give preference to the coefficient of variation because it is a dimensionless indicator, and thus is not distorted by the scale of measurement. This is particularly important, when measuring regional disparities of nominal values, since otherwise high inflation rates and changes in unit of measurement (such as currency reforms) impact on measures of regional disparities. As a reference Figure 1 is shown for the standard deviation in the appendix, however.

[7] For the candidate countries and the new member states of the EU Boeri and Scarpetta (1996) were among the first to document the large increase in regional labour market disparities Smith (1998), Gorzelak (1996), Petrakos (1996), Römisch (2002), present further evidence on these countries for unemployment, wages, GDP per Capita. For the FSU countries Solanko (2003) provides evidence on GDP per capita figures for Russia.

[8] Differences in the magnitude of the coefficient of variation should not be over interpreted since these depend strongly on the number and size of regions in a country and may thus reflect the differences in geography and territorialisation.

observations are available. The notable exceptions to this are the Czech Republic and Romania. In both these countries regional disparities in unemployment rates decreased after some oscillation. In particular in the Czech Republic this is due to the statistical effect of extremely low average unemployment rates in the beginning of transition on the coefficient of variation.

Furthermore, in those countries where unemployment rate disparities have increased in the last decade this process has almost come to a stop and increases in other countries have been modest in all countries but Russia and Slovakia, where large increases were registered in this time period.

Regional unemployment is also positively correlated with regional non-participation (in all countries but Lithuania and Romania), indicating that at least some of the labor force is discouraged from searching for employment. In particular in Russia this correlation has increased in the last decade (see EBRD, 2003). This suggests that the actual amount of labor which could become available on labor markets when unemployment rates reduce could be underestimated by only focusing on unemployment rates and that disparities in the degree of under-utilization of labor are even higher than implied by the registered unemployment data reported in Table 2.

Thus in summary while the divergence was the general tendency during the early transition period, magnitudes and timing of this divergence process differed among countries. In particular in some of the early starters to market oriented reforms such as Hungary or Slovenia divergence proceeded somewhat more slowly. Furthermore, divergence in general was more pronounced in income indicators such as wages than in regional unemployment and has proceeded less slowly in many of the more advanced transition economies in the later transition period.

At the same time the ranking of regions in the spectrum of the distribution has remained relatively stable. Thus regional disparities in wage and unemployment rate levels have been highly persistent throughout transition. Regions showing better performance at the outset have also tended to perform better in later phases. Correlation coefficients over time periods for different indicators of regions' labor market conditions (see: table 3) are high and significant in almost all countries. Again there are, however, some important exceptions. In particular in Bulgaria, Romania and Russia, which may be considered countries, which were slightly slower in their reform process, some important changes in the regional distribution of unemployment rates occurred in particular in the early transition. In Estonia similar observations apply to wage levels.

Table 3: Correlation of unemployment rates, wages and participation rates in the regions of transition countries

1992 - 1998

	Registered unemployment rate	Participation rate[a)]	Wages
	1992-1998	1992-1998	1992-1998
Bulgaria (NUTS II)	0.46	-	0.89
Czech Republic (okres)	0.65	-	0.84
Hungary (NUTS III)	0.90	0.86	0.91
Poland (old voivodships)	0.90	0.85	0.95
Romania (NUTS II)	0.42	0.96	0.78
Estonia (NUTS II)*1995-98	0.97	0.98	0.46
Latvia (NUTS III)	-	-	-
Lithuania (NUTS III)	-	-	-
Slovenia (NUTS III)	-	-	-
Slovakia (okres)	0.80	0.68	0.93
Russia (Oblast)	0.63		0.94

Source: Regspec/Accesslab, Goskomstat a) in % of total population

Post 1999[b)]

	Registered unemployment rate	Participation rate[a)]	GDP per capita
	1999-2003	1999-2000	1999-2001
Bulgaria	-	0.898	0.912
Czech Republic	0.853	0.971	0.999
Hungary	0.773 [1)]	0.994	0.975
Poland	0.837	0.995	0.990
Romania	0.103 [2)]	-	0.843
Estonia	0.977	0.976	0.999
Latvia	0.915 [3)]	0.967	-
Lithuania	0.031	0.900	0.991
Slovenia	0.806	-	0.987
Slovakia	0.947	0.991	0.999
Russia[c)]	-	-	-

Source: Eurostat, New Cronos. – [1)] 2000/2003. [2)] Nuts II. [3)] 2002/2003. a) In % of total population. b) all at NUTS III level, c) Oblast level

This suggests that first of all the increasing regional disparities among regions are rooted in factors and deficits lying in the period prior to transition, and second that regional disparities may be of a long-run nature rather than a transitory phenomenon. Recent econometric evidence by Römisch (2002) for EU accession candidate countries and new member states, Profit (1999) for the Czech Republic and Solanko (2003) and Granberg (1999) for Russia supports this hypothesis. They find that divergence has been accompanied by an increased polarization of regions. The distribution of regional unemployment rates and GDP per capita has become increasingly bi-modal with two distinct groups arising: One characterized by high unemployment and relatively low income levels and another with low unemployment and high income levels. This suggests that even though some of the divergence process may be transitory in the long-run regions may become clustered into distinct groups of

prosperity: one covering a relatively small group of well to do regions and another large group of relatively poor regions.

Differences in starting conditions and access to market potential are the most important causes for divergence

Given the evidence of divergence in transition and the indication that the labor market disparities seem to be of a long-run nature. The question arises what have been the causes for the differentiation of regional growth processes in transition economies. A substantial body of research (see, e.g., Barjak and Heimpold, 1999; Gorzelak, 1996, for Poland; Smith, 1998, and Bucek, 1999, for Slovakia; Totev, 2000, for Bulgaria; Fazekas, 1996 for Hungary, Scarpetta and Huber, 1995; as well as EPRC, 2001, for the CEE 10) has thus gone into the search for these causes. This research in analogy to the literature on national development during transition has focused on three potential candidates for differentiation of regional fortunes in transition:

1. Starting conditions have been repeatedly named as determinants of regional welfare: Regional developments in transition, can only be understood in the context of the legacies of the former socialist system. For instance Smith (1998) in his account of regional disparities in socialist Slovakia argues that regions, which turned out with worse performance, were usually industrialized in the socialist era. He argues that regional policy in the socialist era, which put more emphasis on the goal of regional equalization and bringing work to the workers than is the case in most market economies, paired with the tendency of socialist industrial policy to generate large enterprises, led to a situation where new production locations were developed mostly as a site for a plant of much larger firms. In consequence newly established plants in peripheral regions experiencing socialist industrialization (as Smith 1998 terms this pattern) tended to serve low skill assembly and production, only. Many did not have research and development, design or even "sales" functions (Smith, 1998). These enterprises were often controlled entirely from centers of large firms in large cities and unsurprisingly were also the first to experience economic problems in transition. This was aggravated by the fact that often only one large such enterprise served one community or even region. In a similar vein Dostal and Hampl (1994) document that 51% of all Czech firms had their central office in Prague in the 1960s, that the vast majority of export firms (that is firms who had the permission to export and import from western market economies) was located in Prague and in the 1980s almost 60% of the R&D departments resided in the capital. Finally, Dmitrieva (1996) in her study of the regional disparities in the Soviet Union shows that

focusing on differences in living conditions sizeable regional disparities existed already in the pre-transition era.[9]

2. Integration into the world economy has also undoubtedly been an important driving force not only of macro-economic but also of regional development in transition. This factor impacting on regional development is, however, closely linked to differences in starting conditions. In general regions with better starting conditions were also more capable to succeed in the more competitive international markets. Substantial evidence (see Crozet and Koenig-Soubeyran, 2004 for Romania, Bosco and Resimini, 2002 for a selection of transition economies, Spindrova, 2002 on Bulgaria) suggests that in particular the new EU member states and candidate countries regions with better market access to western economies experienced higher population growth, lower unemployment rates and lower reductions in employment as well as higher GDP growth rates in particular in early transition. Border regions have profited from purchasing power inflows, foreign direct investments and higher trade exposure. Capital cities have often attracted FDI as well as profited from increased purchasing power and the substantial economic potential (in terms of R&D Resources, infrastructure and company headquarters).

   Furthermore, the process of regional differentiation seems to have been closely associated with the impulse given from foreign direct investments and to a lesser degree on the speed with which trade reforms occurred. A number of studies (Dostal, 1999, for the Czech Republic, Fazekas, 2000 for Hungary) document the strong correlation between regional unemployment, employment and GDP growth and the inflow of foreign direct investment. Egger et al (2004) document a positive association between the rise of regional disparities and growth in foreign trade volumes. In general in countries where foreign trade grew more rapidly regional disparities also increased faster. Iara (2004) finds that the export orientation of a region aside from sectoral specialization was the most important determinant of regional GDP per capita growth in Hungary in the period 1995 – 2000.

3. The impact of transition policies such as stabilization, trade liberalization and banking reform by contrast has been less intensively researched, since in many of the smaller transition economies most reforms have been conducted on a national rather than a regional scale. However, for the larger countries such as Russia where some autonomy in speed of reforms existed, some association has been documented between transition policy and regional disparities. Berkowitz and DeJong (1999) find that regions with more rapid privatization had higher employment growth rates post transition. Slinko, Yakolev and Zhuravskaya (2003) show that regions which give more

[9] This of course should not come as a surprise given the size of the former Soviet Union.

preferential treatment to dominant industries are characterized by slower small business growth and that this preferential treatment has adverse effects on regional public finance.

Results by other researchers focusing on other countries, however, suggest that the link between the speed of privatization and net job creation may be ambiguous because in regions where privatization has been more rapid, job destruction processes in old formerly state-owned enterprises were faster (see Faggio and Konings, 2003; and Duffy and Walsh, 2002), as were job creation in new enterprises. Thus for most of the candidate countries to the European Union correlations between privatization and employment growth are ambiguous. Scarpetta (1995) finds ambiguous results concerning the impact of the private sector share on unemployment levels, while Fazekas (1996) finds that an index of entrepreneurial capacity[10] in a region reduces unemployment. Finally, Sibley and Walsh (2002) find that in Poland regions deemed to be further advanced in transition are also regions with higher internal regional disparities.

Furthermore, great care has to be taken in interpreting the causality of these results, since to the degree that political decision makers will privatise enterprises with good growth prospects first, a positive correlation between regional employment growth and fast privatization may arise because high employment growth facilitates privatization and not because privatization helps employment growth.[11]

Substantial structural change at the regional Level

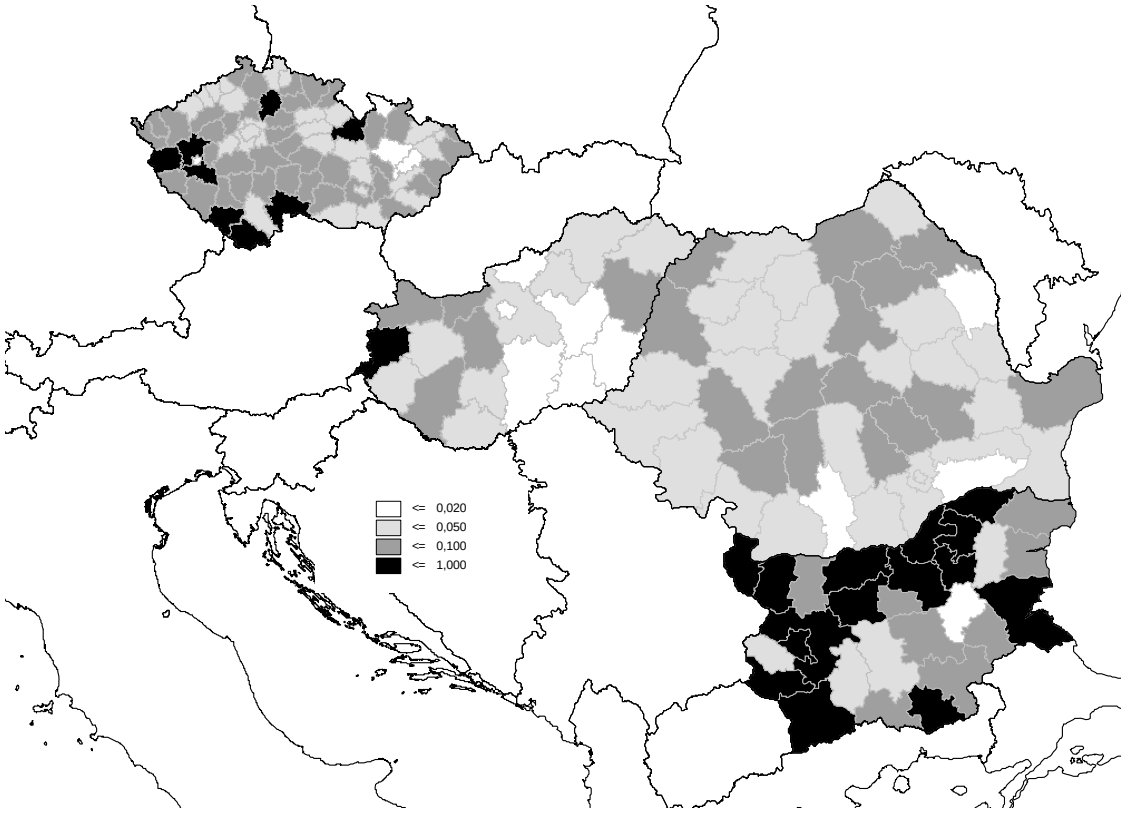
Aside from divergence and polarization tendencies, transition has also been associated with substantial structural change in the composition of employment in the last decade. Boeri and Terrel (2002) for instance report that the private sector employment share in Central and Eastern European candidate countries increased to 67.7% from virtually zero and that the share of employment in small-scale firms with fewer than 100 employees was 41.7%, while the share of services in total employment increased by 10.1 percentage points from 1989 to 1998. Mickiewicz (2001) analyzes structural change in transition economies on a national level. He finds that the employment share of industry has decreased in virtually all transition countries but that there have been two distinct forms of sectoral restructuring, which Mickiewicz (2001) terms the vertical path, where de-industrialization has been associated with an increasing share for the agricultural sector, and the horizontal path, where service sector activity has replaced industrial activity. The vertical path has been followed by countries such as Romania,

[10] This index is constructed from objective indicators of entrepreneurial activity as well as from more subjective indicators on attitudes of the population.

[11] It should be noted that similar arguments apply to the association between FDI and employment growth. To the degree that foreign firms are more likely to invest in prosperous firms, a positive correlation between FDI and employment growth will be found even if FDI's do not help in creating new jobs.

Russia and Ukraine, while the horizontal path characterizes many of the more advanced transition economies such as those of the Vysegrad-4 as well as Estonia and Croatia. Mickiewicz and Zalewska (2002) also find that the determination with which of these paths is followed seems to have been strongly determined by the institutional reform path taken by the respective country. Econometric evidence suggests that indicators developed by the EBRD concerning the extent of structural reforms are important in predicting structural change in the candidate countries. In particular, successful restructuring at micro level (resulting from ownership changes and implementation of efficient corporate governance systems) seems to co-vary strongly with 'efficient' sectoral restructuring at the macro level.

Figure 3: Regional – Sectoral Structural Change between 1992 and 1998



Note: Figure displays turbulence indicator of structural change at the sectoral level (see Footnote 12 for a definition)

In figure 3 we use data on sectoral employment shares from 1992 to 1998 in a limited number of transition economies (Czech Republic, Hungary, Romania and Bulgaria) to document that structural change has varied substantially across regions in early transition by plotting the structural turbulence

indicator[12]. As can be seen in this figure sectoral employment shares shifted most dramatically in regions closer to the west in both Hungary and the Czech Republic while in both Romania and Bulgaria a more even dispersion of such structural change emerged. Thus border regions – which also experienced better development in transition in these countries – also seem to have experienced higher structural change in the countries closest to the EU. By contrast, capital cities in all countries range in the lower part of the distribution, indicating that these regions – although also having higher growth rates – did not experience so much structural change.

These stylized facts are of particular interest in the context of transition because during the last two decades there has been a growing academic and policy interest in the spatial impact of economic integration, related to a general concern that structural change accompanying economic integration is likely to result in increasing regional specialization and concentration of industrial activity, which in turn may cause increased regional disparities and may make regions vulnerable to asymmetric shocks. In such a case, industry-wide demand shocks may become region-specific shocks and short-term adjustment costs may be high if firms are closed or relocated.[13]

Traistaru, Nijkamp and Resmini (2002) investigate patterns of regional specialization and geographic concentration of manufacturing and their determinants in Bulgaria, Estonia, Hungary, Romania and Slovenia using regional manufacturing employment data for the period 1990-1999. The overall findings, however, as well as the existing country studies in their collective volume (see: Spindrova, 2002, Redei, 2002, Traistaru and Pauna, 2002, Damijan and Kostevc 2002, Fainshtein and Lubenets, 2002) suggest few common features. Regional specialization has increased in Bulgaria and Romania, decreased in Estonia and has not significantly changed in Hungary and Slovenia.

Furthermore, patterns are also relatively heterogeneous concerning the development of border regions. Regions bordering the EU are found to be less specialized than the national average in Estonia, Hungary and Slovenia while they are more specialized in Bulgaria. Regions bordering other accession countries are found more specialized compared to the national averages in Estonia and Hungary, while in Bulgaria and Romania this type of regions are less specialized. Regions bordering other countries (non EU, non accession countries) have become more specialized with the exception of Romania. Non

[12] This is defined as half the sum of changes in sectoral (agriculture, industry and services) employment shares between 1992 and 1998 in the region i.e. as $s_j = 1/2 \sum_i abs(s_{ijt} - s_{ijt-1})$ with s_{ijt} the share of sector i in region j at time t. It takes on values between 0 (no changes in shares) and 1 (complete change from one sector to another). It can be interpreted as the minimum number of employees changing sector of employment within a given time period.

[13] This point has been forcefully made in the literature by the so called "new economic geography" models such as in Fujita, Krugman and Venables (1999)

border regions are less specialized in Bulgaria and Hungary and more specialized in Romania and Slovenia.

High regional specialization may however be associated with bad economic performance. Diversified regions perform better according to the results in Traistaru, Nijkamp and Longhi (2002), but here too regional factors such as infrastructure, market accessibility or R&D potentials seem to be more important than sectoral specialization and concentration patterns. Traistaru and Wolf (2002) investigate and explain regional differentials in employment changes in Bulgaria, Hungary and Romania.[14] Using a shift-share method this paper finds that the variance of regional employment change is driven almost entirely by region-specific factors while regional specialization and regional competitiveness play only a minor role in explaining regional employment change differentials. Employment change differentials are uniform across sectors and vary across regions.

There is, however, a stronger link between regional characteristics and location of industries. This link is broadly consistent with theoretical expectations on the locational advantage of region types. Traistaru, Nijkamp and Longhi (2002) find that industries with high economies of scale, high technological standards and high wages are concentrated, while industries with low technological standards and low wages are dispersed. The results of the econometric estimation of determinants of manufacturing location suggest that both factor endowments and geographical proximity to industrial centers explain the economic geography of manufacturing in accession countries. Labor intensive industries tend to locate in regions with labor abundance, while regions endowed with researchers attract research intensive industries. Industries with large economies of scale tend to locate in regions close to industrial centers (the capital cities in Bulgaria, Romania and Hungary; European markets in the cases of Estonia, Hungary and Romania).

Differentiation of Regional Prospects

Labor market problems differ across regions

Despite common patterns concerning regional divergence, polarization and structural change, regions in transition economies differ widely in labor market problems. This can be exemplified at the hands of the regions of the regions of the EU member states and candidate countries. In Gacs and Huber (2004) we collected information on 45 NUTS II regions of 9 candidate countries for the years 1998 to 2001 and the 184 NUTS II regions of the 15 current EU member states and use the indicators used by the European commission to evaluate the labor market situation in EU member states, the employment rate (in percent of total working age population), the gender difference in employment rates (as the

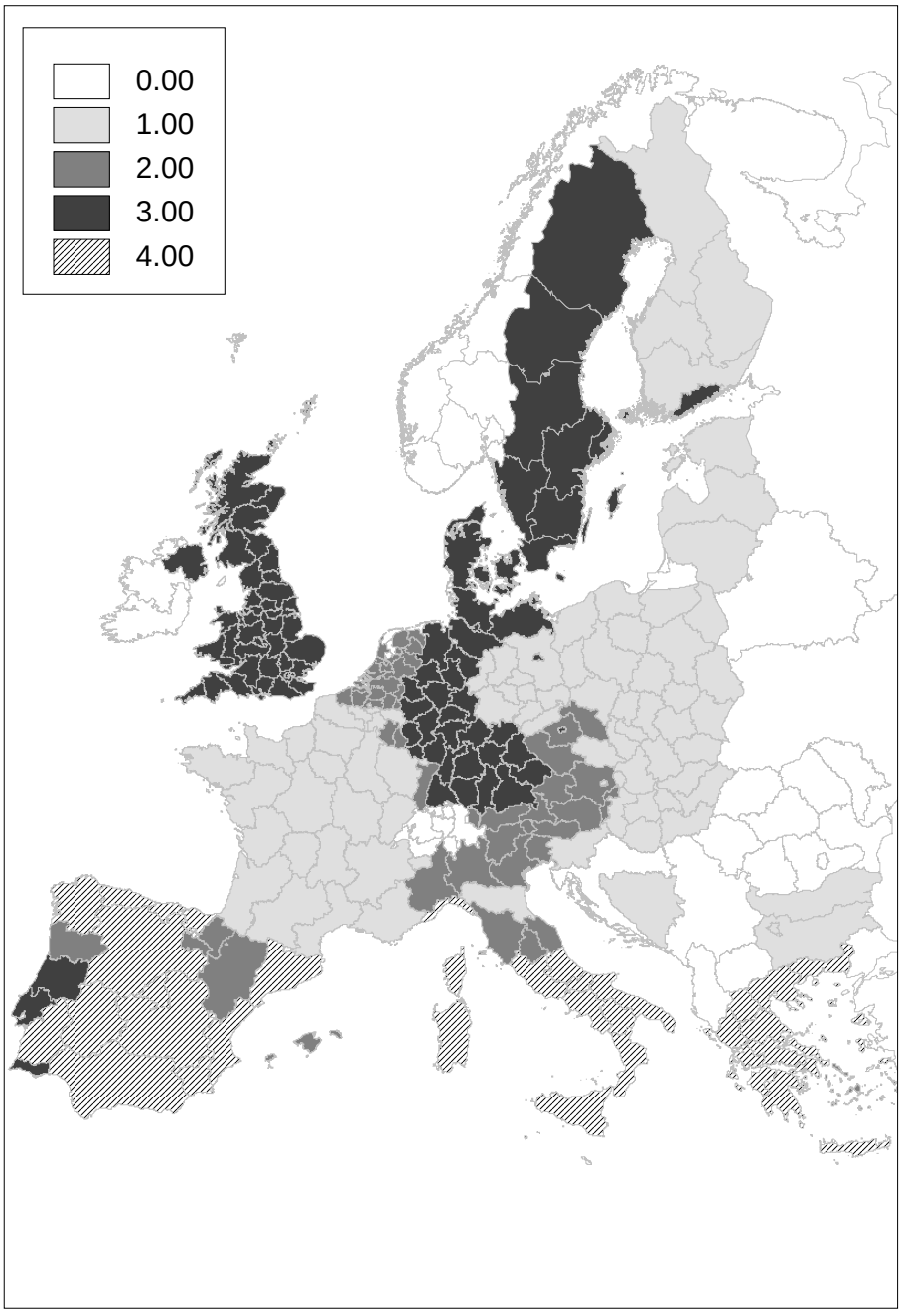
[14] Similar results are reported for Poland, the Czech Republic and Slovakia in Huber and Wörgötter (1999)

ratio of male employment to female employment rates) and the employment share of the elderly (employment of those older than 55 relative to total employment) on the "employment" side. On the "unemployment" side we focused on overall unemployment, gender difference in unemployment rates, long-term unemployment (relative to total unemployment) and the unemployment rate of the young (relative to total labor force) as well as the participation rate and gender differences in participation rate to perform a cluster analysis dividing both EU and candidate countries' regions into four groups.[15]

Our findings suggest that new member states and candidate countries are not characterized by completely different regional labor market problems than those of the current EU member states. The group where most of the candidate countries regions can be found is group one, which is characterized by relatively high overall unemployment rates, slightly below average employment rates and low employment of the elderly as well as low gender differences in both unemployment and employment. Aside from regions of the new member states and candidate countries in Poland, Slovakia and Eastern Hungary this group draws substantial membership from 38 EU regions, which are mostly located France, Germany and Belgium. Thus these regions rather than southern European labor markets are the most comparable to new member states and candidate countries regions.

[15] Cluster analysis is a method from the "tool box" of explorative data analysis, which allows to form groups according to the criterion of greatest similarity in a the set of indicators: To conduct this analysiswe subtracted the mean across regions and divided each observation by the standard deviation of each indicator (i.e. we formed Z-values such that $z_i = \frac{x_i - \mu_x}{\sigma_x}$ with μ_x the (unweighted) mean of the indicator and σ_x its standard deviation across all European regions). Furthermore, we used squared Euclidean distances and average within group linkage to define groups. To decide on the number of clusters reported we look at the distance between the two merged clusters. We decided for 4 groups in order to avoid an excessive amount of groups.

Figure 4: Labor market group membership of European regions (results of a cluster analysis)



Notes: Figure displays the results of a average within group linkage cluster analysis performed on the standardized values of regional employment rate (in percent of total working age population), gender difference in employment rates (as the ratio of male employment to female employment rates), employment share of the elderly (employment of those older than 55 relative to total employment), overall unemployment, gender difference in unemployment rates, long-term unemployment (relative to total unemployment) and unemployment rate of the young (relative to total labor force), participation rate and gender differences in participation rate. Group 0 implies the respective region was not considered. Souce: Gacs and Huber (2004)

Table 4: Group Means and Summary Statistics on Cluster Membership of European labor Market Clusters

	Group 1	Group 2	Group 3	Group 4
Unemployment rate	12.97	4.82	6.09	14.57
Youth Unemployment	8.46	3.86	4.71	10.28
Long Term Unemployment	45.69	35.56	36.91	51.57
Employment Rate	58.64	65.60	69.23	52.82
Employment Rate of the elder	7.57	7.48	11.91	11.83
Gender differences in employment rate	0.82	0.70	0.81	0.55
Gender differences in unemployment rate	0.84	0.55	1.12	0.47
		Number of regions from		
New Member States[a)] and Candidate Countries [b)]	41	3	1	0
EU-Regions	38	37	71	38
of this Southern Europe	2	15	4	37
Total	81	55	76	75
		Share of Population living in Clusters from…		
Candidate Countries	93.92	4.62	1.46	0.00
EU-Regions	23.55	17.04	39.06	20.36
Total	36.28	14.79	32.25	16.68

Notes: a) Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, b) Bulgaria, see notes to Figure 4 for description of methods and variables used. Source: Gacs and Huber (2004)

Further groups where new member state and candidate countries' regions are represented are groups two and three. Three Czech regions are members of the second group. This comprises the low unemployment rate regions in Central and Northern Europe (Austria, northern Italy, Netherlands, and Belgium) as well as a few low unemployment southern European regions. Furthermore, this group has employment rates only slightly above average as well as low employment rates of the elder. Prague (the capital city of the Czech Republic) is grouped into group three, which otherwise may be considered a cluster of the northern labor markets of Sweden, Denmark and Great Britain as well as Germany. This group is characterized by only slightly higher unemployment rates as cluster two, but substantially higher employment rates (in particular for the elder) and lower gender differences.

In consequence our analysis suggests that southern European labor markets, which have often been viewed as the most comparable to candidate countries on account of their high unemployment may not be the best comparison group. The southern European regions of Italy, Spain and Greece are put in altogether different groups than the candidate countries, when looking at the larger labor market situation. Most of the southern European regions end up in cluster four. This is characterized by even higher unemployment rates as in the candidate countries, and substantially higher rates of youth and long term unemployment as well as lower participation and employment population rates and extremely high gender differences.

Capital cities and border regions have shown better performance, rural-peripheral regions have faced considerable problems

Furthermore, one of the robust findings in the research on regional development of transition economies is the privileged role of urban agglomerations (in particular capital cities) and regions bordering on Western Europe. This can be illustrated for a subset of member states and candidate countries (Bulgaria, Czech Republic, Hungary, Poland and Romania) by employing a taxonomy of the candidate countries regions' developed by Scarpetta and Huber (1995) which has been widely used in regional labor market analysis in candidate countries (see: Burda and Profit, 1996, Boeri and Scarpetta, 1996, Boeri and Terrell, 2002). This divides the regional units of the countries analyzed into industrial, agricultural, urban (which also have the highest share of service sector employment) and diverse regions (the latter can also be interpreted as peripheral regions).[16] Table 5 reports average participation rates and unemployment rates relative to the national average in 1992 and 1998 in the respective regions of the candidate countries. A value larger than one indicates that the average region of this type has shown a value higher than the national average, while a value smaller than one indicates a lower value than the national average in candidate countries. Urban regions - which account for a little over one-eighth of the regions, but a higher share of population - have shown substantially smaller unemployment rates and slightly higher participation rates throughout transition, while the other diverse regions have been characterized by substantially higher unemployment rates and both slightly lower participation rates and wages. Industrial regions by contrast had substantially higher unemployment rates in 1998, only - a fact that reflects industrial restructuring in many of the regions. Agricultural regions have performed according to the national average.

Table 5: Regional indicators relative to national Average by region types

	Participation rates (In % of total population)		Registered unemployment rates		Number of regions
	1992	1998	1992	1998	
Agricultural Regions	0.90	0.95	0.93	1.03	71
	(0.16)	(0.14)	(0.27)	(0.39)	
Industrial Regions	0.97	0.98	0.99	1.11	61
	(0.14)	(0.12)	(0.39)	(0.38)	
Urban Regions	1.10	1.04	0.67	0.73	26
	(0.30)	(0.19)	(0.31)	(0.33)	
Other Regions	0.96	0.96	1.20	1.18	56
	(0.10)	(0.09)	(0.30)	(0.29)	

Note: Table reports unweighted averages (standard deviations) of variables normalised by national averages for candidate countries' and new member states' regions only (i.e. Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia). Values in brackets are standard deviations. Source: Gacs and Huber (2004a)

[16] These regions usually similarly to urban centers have a diverse economic structure, but are characterised by substantially worse endowment with infrastructure and human capital.

Similar evidence can be brought forth for almost all transition countries.[17] Capital cities and their environs as well as regions located closer to the border of the EU have shown better economic development than other regions. Indeed evidence suggests that the vicinity to a high demand potential plays an important role in firm level as well as regional employment growth in candidate countries and member states. Aidis and Mickiewicz (2005) provide evidence that location in a capital city has positive effect on employment growth in particular for SMEs for Poland and Rutkowski and Przybyla (2002) show that a share of high service industries is associated with higher regional hiring rates in Poland. This is consistent with the general pattern of regional heterogeneity and with capital cities playing a role of outliers in the economic development of the new EU member states, due to the political, economic and administrative centralisation inherited from the command economy system and also consistent with earlier findings (see also: Mickiewicz and Bell, 2000). Furthermore, links to foreign markets, (i.e. exporting) play an important role supporting employment creation (see Aidis and Mickiewicz, 2005 for Poland and Iara 2004 for Hungary) and for Romania Telegdy (2005) finds a link between employment dynamics at the firm level and the distance from the Western border (i.e. with Hungary), which may be seen as a measure of distance from the key foreign market.

By contrast, peripheral agricultural regions have gone through difficult times during transition. In part this can be explained by falling agricultural income in the transition countries, which was caused by adjustment to world market prices of both inputs and outputs leading to higher input and lower output prices. The European Commission (2001) for instance finds that poverty rates are particularly high in rural areas of the EU member countries and Blinova and Rusanowsky (2001) find that in Russia regions with a higher share of agricultural employment have higher unemployment rates, than other regions.

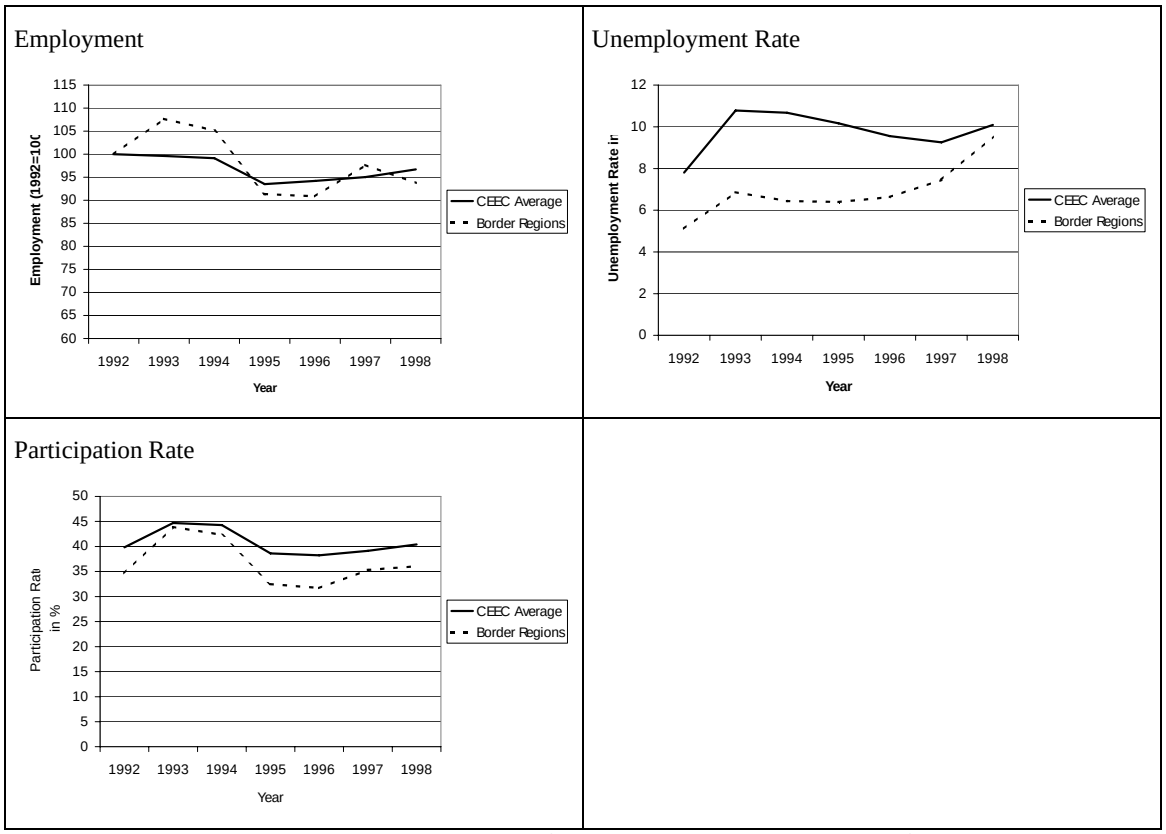
Aside from high unemployment rates agricultural regions and particularly "other diverse regions" are, however, characterized by below average participation rates (see Figure 5), suggesting that in these regions discrepancy between the officially measured unemployment and the actual underutilization of labor may be particularly concentrated.

In part this finding may be traced to the lower quality of infrastructure found in agricultural and peripheral regions and to lower levels of human capital endowments. Mickiewicz, Gerry and Bishop (2004) show that firms in regions with better infrastructure create more employment at least in Poland and evidence also suggests that in particular regions with bad infrastructure and human capital endowments face particular problems with the outflow of unemployed to employment. For instance

[17] One exception to this is Russia where Granberg and Zaitseva (2002) find no clear evidence of a better economic development of western border regions relative to other regions.

Rutkowski and Przybyla (2002) find that regional hiring rates are strongly correlated with both infrastructure measures such as the number of telephone lines as well as human capital measures, although only human capital measures have a significant impact on hiring rates in a regression analysis.

Figure 5: Evolution of employment, unemployment rates and labor force participation in EU border regions and the CEE average, 1992-1998



Note: Figure reports unweighted averages (standard deviations) of variables normalised by national averages for candidate countries' border and non border regions only (border regions are regions bordering to the EU). Source: Gacs and Huber (2004a)

In addition in the candidate countries and new member states some mono-industrial or mono-enterprise regions seem to have had particular labor market problems, although a general connection between industrialization and unemployment experiences is hard to establish in most transition economies. Studies which have focused on the link between mono-industrialization and labor market performance of a region also tend to be contradictory in this respect and much seems to depend on the competitiveness and growth prospects of the dominant industry or enterprise in such regions. In Huber and Ochotnicky (1995) we find substantial heterogeneity in the development of mono-enterprise regions in the early stages of transition, where mono-industrialization in particular is uncorrelated with vacancy levels and unemployment rates. Similarly, Herzog (2000) finds that greater specialization was

positively correlated with employment growth in Poland and the Slovak Republic while Traistaru, Nijkamp and Longhi (2002) find a negative correlation for many other countries.

For Russia, mono-industrialization, however, implies a much larger problem due to the differences in geography of this country. In this case firms may become monopsonists in the labor market and a number of inefficiencies may result. Thus the evidence on mono-industrial or mono-enterprise regions is more indicative of problematic developments. A number of case studies on in particular Siberian regions (e.g. OECD, 1998) suggest that mono-company towns face particular problems when dominant firms are restructuring, had higher wage arrears and worse living conditions than regions with a more diverse industrial structure and Friebel and Guriev (1999) argue that the strategic behavior of dominant companies in mono-enterprise regions may be a source for wage arrears and low migration in Russia.

The Adjustment Capability of regional labor markets in Transition

Aside from posing questions concerning the causes for long-run differences in growth paths the high regional labor market disparities in transition economies also pose the question to what degree the usual mechanisms of regional equalization on labor markets such as migration, wage flexibility, investments and changes in labor force participation can be considered viable in reducing disparities.

Recently a number of studies (e.g. Bornhorst and Commander, 2004, Huber 2004, Gacs and Huber, 2004a) have attempted to identify the mechanisms of regional adjustment in the transition countries. These studies find that in transition economies the regions hit most severely by structural change show little sign of recovering from employment losses by increased job creation and that adjustment via labor market participation plays an important role in the transition countries. This suggests that both migration and wage flexibility is rather low. In this section we thus focus on summarizing the results of studies on the propensity to migrate and regional wage flexibility in the candidate countries. Furthermore, we also focus on the evidence on the potentials for capital mobility to act as a regional equilibration mechanism.

Migration is low in transition countries and has fallen despite increasing regional disparities

Inter-regional migration is low even relative to the European Union in most transition economies (see table 6). Fidrmuc (2004) comparing internal migration in the Czech Republic, Poland, Hungary, Slovakia and Slovenia with that in Italy, Spain, the Netherlands and Germany concludes that migration rates are little effective in reducing regional disparities in the new member states and candidate countries. Ederveen and Bardsley (2004) find evidence that after controlling for methodological and

data construction differences between studies, migration in the candidate countries is less reactive in particular to differences in unemployment rates and Andrienko and Guriev (2003) state that overall migration in Russia is low, although Russia is the only country – aside from Hungary – where migration rates approach European levels, but clearly fall short of US levels (see: EBRD, 2003).

Table 6: Migration indicators by country and year

	Gross MigrationRates[1)]		Net Migration Rates[1)]		Share of net Migration[1)]	
	1992	**1999**	**1992**	**1999**	**1992**	**1999**
Czech Republic	0.57	0.50	0.009	0.063	1.64	12.61
Estonia	0.87	0.53	0.203	0.024	23.24	4.64
Hungary	1.49	1.32	0.094	0.054	6.30	4.11
Poland[a)]	0.37	0.29	0.053	0.033	14.48	11.20
Romania	n.a.	1.23	n.a.	0.013	n.a.	1.09
Slovenia	n.a.	0.30	n.a.	0.021	n.a.	7.15
Slovakia[b)]	n.a.	0.22	n.a.	0.023	n.a.	10.25
Russia[c)]	2.20	1.80	0.187	0.219	12.8	8.8
Kyrgyz Republic[d)]	0.73	1.77	n.a.	n.a.	n.a.	n.a.

Notes: Gross and net migration rates are measured in % of the population. Gross migration is the share of people moving across regional borders within the country in a year. Net migration is calculated as half the sum of absolute values of net migration across regions, the share of net migration is the ratio of net to gross migration a) Polish data in first column are 1990 figures b) Slovak data are from the year 2000. n.a. – data not available c) Russian Figures for 1992 and 2000. d) Figures calculated from Babetski, Kolev and Maurel (2004) first column average 1989-1993 second column average 1994-1998 1) Figures are in %. Source: Eurostat New Cronos, Huber 2004a, Andrienko and Guriev (2003), EBRD.

This said there seems to be some important variance across countries. While in most of the countries analyzed by Fidrmuc (2004) low migration rates are the rule, Hazans (2004) finds that in the Baltic countries migration rates are relatively high by international standards, Cseres Gergeley (2002) finds higher short distance moves in Hungary, and Kallai (2003) shows that in Romania migration rates are comparable to those found in many of the more flexible western European Labor markets. Finally, Andrienko and Guriev (2003) also find that in Russia migration is highly reactive to regional living conditions, a finding that is not common for most of the other transition countries.

Furthermore, results also show that migration rates in the candidate countries have fallen substantially in the decade after the 1990s and thus relative to the socialist era although regional disparities have widened. Indeed this "stylized fact" seems to apply even more ubiquously to the transition countries than low migration rates themselves. Fidrmuc (2004) for the big central European candidate countries, Hazans (2004) for the Baltic states, Kallai (2004) for Romania and Andrienko and Guriev (2003) for Russia all find this decline in migration rates only Babetski, Kolev and Maurel (2004) find an increase in migration in the Kyrgyz Republic. A further difference seems to be that in some countries (in particular in the Baltic countries) this decline ends shortly after transition, while in others (in particular in the Central European Countries) this decline continues well into mid-1990.

Finally, the scarce evidence on commuting – which may serve as a substitute for migration – available in the transition economies does not seem to indicate that this is a viable alternative. Boeri, Burda and Köllö (1998) cite evidence that in Hungary migration in excess of 20 kilometers could cost as much as the minimum wage and travelling more than 50 kilometres would cost more than the average wage in Hungary, while Hazans (2003) finds that in the Baltic countries between 23% (Estonia and Lithuania) and 19.3% (Latvia) of the full time employees commute across municipal borders. This seems small given that commuting is measured across communal borders.[18] Hazans (2003), however also finds that commuting has contributed to reducing regional labor market disparities. Finally, Bartus (2004) analyzes the commuting behavior of Hungarian job finders. He finds that travel to work costs severely constrain the commuting distance of unemployed workers in Hungary. Long-distance commuting seems conditional on employers' contribution to travel to work costs with only 15 per cent of the commuters self-financing their travels. Estimating a model of commuting decisions he finds that travel to work costs limit the distance of self-financed commuting to 20 km with women and 50 km with men.

Low and falling migration in the face of large regional disparities in terms of regional income and unemployment rates in the candidate countries present somewhat of a puzzle. According to economic theory (see Todaro, 1969, and Harris and Todaro, 1970) migrants move from places with low expected income to regions with high expected income in order to maximize their lifetime utility. Therefore, high regional disparities should increase the incentive to migrate rather than lower migration. Although some studies (Hazans 2004 for Latvia and Fidrmuc and Huber (2004) for the Czech Republic) find some evidence of an increasing responsiveness of migration to wages, explanations for these low and declining migration rates are needed if policy is to effectively increase migration. A number of such explanations have been put forward and were analyzed in the context of the current study:

- First, as argued by Decressin (1994), high nation-wide unemployment rates may discourage internal migration, as they indicate falling probability of finding employment.

- Second, it has been argued (see: Faini et al, 1997) that spatial matching (i.e. the process by which unemployed workers find employment in potentially other regions) in labor markets may be less efficient in Europe.

[18] In Austria for instance – which is a country where commuting is difficult due to geographic conditions in many areas, - around 42% of the employed (i.e. double as high a share) commuted across communal borders in 1991.

- Third and closely related, skill mismatch in may be an important element. New jobs are created mainly in the service sector in urban regions, these jobs may require skills not available to unemployed blue collar workers in other regions.

- Fourth, policy interventions as provided through social and regional policy as potential have been considered culprits for low migration rates.

- Fifth, aside from government support other unmeasured income components, such as black market income or income from subsistence farming may induce labor market searchers to stay at home rather than move elsewhere in the country.

- Sixth, inefficiencies in the housing markets could have led to decreasing migration. This may be the case in particular in countries where rent controls are important and taxation of housing transactions is high.

- Seventh, the context of transition draws attention to the fact that low migration rates may reflect differences between short and long term developments and changes in migrant behavior.

- Eighth, in particular in the context of candidate countries, where income levels are substantially lower than in the EU, liquidity constraints could play an important role in shaping low migration rates.

- Ninth, firm employment and pay strategies in particular in mono-enterprise regions may be designed so as to limit mobility (see: Friebel and Guriev, 1999)

The evidence presented in existing studies on which of the factors is most important in driving low migration rates – while delivering a far from complete picture - suggests that a combination of liquidity constraints, housing market imperfections and in kind transfers may go some way to explaining the low and falling migration rates. Kallai (2004) and Andrienko and Guriev (2003) provide some evidence on the importance of liquidity constraints in shaping migration in Russia and Romania and Bornhorst and Commander (2004) argue that housing market imperfections are an important aspect.[19]

In summary these findings suggest that low migration rates are one of the major obstacles to equalization of regional disparities as well as to effective absorption of asymmetric shocks in the candidate countries. The results, however, also suggest that low internal migration rates in the

[19] Fidrmuc and Huber (2004) as well as Kallai (2004) find little evidence of a significant effect of housing availability on bilateral migration rates in the Czech Republic and Romania, respectively. These results, however, pertain only to indicators of aggregate housing availability. When moving to structure of housing availability Huber (2004b) shows that for EU member states high shares of owner occupied housing belong to the most important correlates of low migration rates in EU member states. Unfortunately, however, the lack of data on candidate countries in this respect prevents further analysis for these countries.

candidate countries have a wide range of reasons of which as housing and capital market imperfections (to overcome liquidity constraints), are probably the most important but in which spatial matching and labor market institutions also have a role to play.

Wage flexibility is slightly higher than in old EU-countries

Most studies that have attempted to empirically analyze wage determination in regional labor markets in transition economies focus on the elasticity of regional wages with respect to some measure of regional labor demand such as the unemployment rate. Within this framework there are two competing approaches. One class of papers follows the wage curve approach (see Blanchflower and Oswald, 1994) where the cross-sectional variance in variables is used to assess the impact of wages, and second models use the longitudinal variance in data (i.e. the notion of Phillips Curves) (see Baddeley *et al.*, 2000).

Most of the evidence concerning the reaction of wages to regional unemployment rates in transition countries has been based on the wage curve approach. Results have been mixed and suggest that wage flexibility is only slightly higher than in EU labor markets. Boeri and Scarpetta (1996) find correctly (negatively) signed but insignificant parameters when estimating equations that relate regional wage change to changes or levels of unemployment rates, and Commader and McHale (1995) report ambiguous results for the Visegrad countries. By contrast, Kertesi and Köllö (1995), using smaller regional units, and Kertesi and Köllö (1997), using individual data for Hungary, find a significant negative impact of unemployment levels on regional wages and present evidence that the elasticity has increased in the course of transition. Kallai and Traistaru (2001) report a significant impact of unemployment rates on wages in a wide variety of specifications for Romania, while Duffy and Walsh (2001) find robust elasticities of wage levels with respect to unemployment rates using both Polish regional as well as individual data from 1991 to 1996 of around –0.1. By far the highest wage response to regional unemployment rates is, however, found by Pastore and Verashchagina (2004) for Belarus.[20]

A few studies have also attempted to compare wage flexibility in the transition countries to the EU. Kertesi and Köllö (2001), using similar methods, find substantial instability in the parameter estimates of the wage curve estimates in Hungary. In particular the elasticity of the wage rate with respect to unemployment rates increased in the years from 1989 to 1993, reaching levels comparable to Western Europe in 1993, and then increased further until 1996. In Huber (2004), we find that the elasticity with respect to regional unemployment rates is slightly higher in candidate countries than in the EU, while

[20] The authors themselves consider this finding rather odd and find no explanation for this stylised fact.

the elasticity with respect to national unemployment rates is lower and Büttner (2004) finds that in general countries where wage curve regressions show a significant negative impact of the unemployment rate on the wage level, the coefficient is lower than in Italy or Germany.

Table 7: Studies on regional response of wages to unemployment rates

	Countries	Dependent variable	Elasticity with respect to unemployment rate
Kallai and Traistaru (2001)	Romania	Wage level	0.13 to –0.25
Duffy and Walsh (2001)	Poland	Wage level	0.16 to –0.11
Huber (2002)	Czech R Slovak R. Poland Hungary	Wage change	Elasticity with respect to unemployment rates is slightly higher in candidate countries than in the EU, the elasticity with respect to national unemployment rates is lower
Kertesi and Köllö (1997)	Hungary	Wage levels	Unemployment rate has significant negative impact on wage level
Kertesi and Köllö (1995)	Hungary	Wage levels (ind. data)	Unemployment rate has significant negative impact on wage level
Boeri and Scarpetta (1996)	Czech R. Hungary Poland Slovak R.	Wage change	Coefficients of change in unemployment are insignificant
Commander and McHale (1995)	Vysegrad Countries	Wage level	There is substantial heterogeneity among countries, results are ambiguous
Büttner (2004)	Czech Republic Poland Hungary Estonia Romania Slovakia Slovenia	wage level	regional unemployment rate is significant and correctly signed in Bulgaria, Czech Republic; Hungary; Poland Slovakia and Slovenia In these countries generally wage flexibility is higher in CEE than in Italy or Germany
Iara and Traistaru (2004)	Bulgaria Hungary Poland Romania	wage level	Significant negative impact of regional unemployment rate in all countries but Romania
Pastore and Verashchagina (2004)	Belarus	wage level	-0.23 - -0.36

Source: Burda, Boeri, Köllö (1998), own research.

Finally, some authors have used other time series methods to identify the connection between wages, unemployment and prices. This evidence too seems to suggest some wage flexibility in the candidate countries. For instance, Welfe *et al.* (2002) find that in Poland the price elasticity of wages is unity – as predicted by standard economic theory –, while Golinelli and Orsi (2000) find a stable long-term relationship between prices and wages in both Hungary and Poland and Bornhorst and Commander (2004) show that in Russia as in Romania and Bulgaria more rapid wage growth has no significant impact on regional unemployment rates.

In consequence this evidence suggests that although there is some variance across countries wage responsiveness to regional unemployment rates is about comparable (and in some countries even slightly higher than in many EU countries). This, however, should not be taken as a sign of high

flexibility since EU countries themselves are known to have a low responsiveness of wage levels to regional unemployment rates.

Capital mobility is unlikely to contribute to regional equalization

Furthermore, wage flexibility on its own is of little effect in reducing regional labor market disparities if it does not entice firms to enter and invest and thus create new jobs in regions with high unemployment rates and low wages. Modern economic theories of regional development such as the new economic geography models (see Fujita, Krugman and Venables, 1999) often argue that in regional economies a firms location decision is shaped by centripetal (agglomerative) as well as centrifugal (disagglomerative) forces. Agglomerative forces such as localized supply and demand networks, internal and external economies of scale, human capital spillovers and specialized infrastructure lead to higher productivity in centers of production and may compensate firms for higher wage (and land) costs and thus create incentives for firms to locate in the center. Disagglomerative tendencies (such as the desire of firms to reduce wage and land costs, escape from high competition in central places and to serve immobile workers demand at low transport costs) by contrast create incentives for firms to locate in the periphery. Thus even with high wage flexibility new investments may not flow to depressed regions since this depends not only on wages but also on the region's business environment.

The evidence available on firm location in transition economies suggests that agglomeration forces prevail. For instance Bornhorst and Commander (2004) find that in the transition countries regions exposed to a fall in labor demand, do not tend to recover employment quickly. This suggests a rather limited role for capital mobility in transition countries.

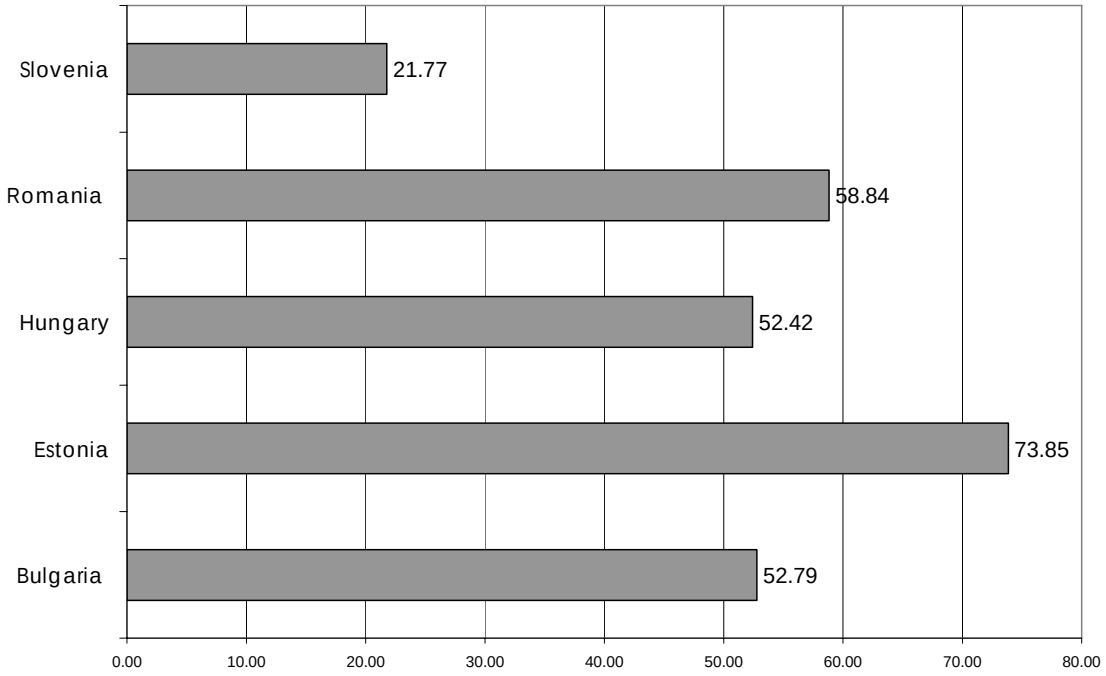
Furthermore, recent studies suggest that FDI – while having a positive impact on a region's wage and employment growth - has remained concentrated in particular on capital cities and other centers of economic activity as well as region's closer to western European borders. For instance Broadman and Recanatini (2001) find that in Russia close to 60% of the foreign direct investments have gone to Moscow City, Moscow oblast, St. Petersburg and Leningrad while most of the other regions received less than 2% of total FDI. Similarly Fazekas (2000) provides an account of how FDI went primarily to Budapest and more Western regions in Hungary.

Similar stylized facts apply to other transition economies. In Figure 6 we plot the share of total FDI located in the region of the capital city.[21] While this data is on the number of enterprises and may thus distort findings relative to figures based on capital invested or employment at foreign owned firms, it

[21] The author would like to thank Iulia Traistaru for providing the data used in this section.

is highly suggestive. In all of the countries but Slovenia – where the smallness and proximity to western European markets may have led to a more dispersed structure of FDI – at least over one-half and up to almost three-quarters of FDIs are concentrated in capital cities. This suggests that foreign investors prefer high wage central locations, to more depressed low cost regions as location of production in transition economies.

Figure 6: Share of total number of foreign owned firms located in capital cities in 1998 (in %)



Source: AccessLab/Regspec

Similarly domestic investments seem to be unlikely to compensate for the concentration of FDI. Basareva (2002) in an analysis of new enterprise formation in Russia indicates that since 1994 Russian enterprise formation has shown divergence and that new enterprises were predominantly created in the high wage low unemployment urban areas. This also applies to other European transition economies. This is evidenced in Table 8 where for a small group of countries for which we have data available we correlate the percentage change in the number of domestic firms between 1994 and 1999 with the wage levels and unemployment rates prevailing at the beginning of the period (i.e. 1994) and for another group we use Eurostat data at NUTS II level to correlate regional investments in the period 1995-2000 (as a percentage of 1995 GDP) with GDP per capita of the regions at the beginning of the time period (i.e. 1995).

We find that in all countries (with the exception of Estonia) the net change in enterprises over this period is positively correlated with the wage level at the beginning of the period and negatively with the unemployment rate. Although these correlation coefficients are insignificant this suggests that new enterprise formation was higher in high wage and low unemployment regions than in low wage and high unemployment regions. Similarly, for investment rates we find a negative correlation between initial GDP per capita and investment rates for Slovakia. Thus in the majority of countries investment rates were higher in regions with higher initial GDP per capita. In summary this evidence, thus suggests that capital mobility is unlikely to lead to reduced regional disparities in transition countries.

Table 8: Correlation of changes in enterprise numbers and investments with regional wage and unemployment levels in 1994.

Dependent variable	Percentage change in number of Enterprises between 1994 and 1999 (NUTS III Level) [a]				Investments 1995 to 2000 [1) b)]
Correlation with	Wages (1994)		Unemployment Rates (1994)		GDP per Capita (1995)
	Including Capitals	Excluding Capitals	Including Capitals	Excluding Capitals	
Bulgaria	0.49	0.37	-0.37	-0.27	-
Czech Republic	-	-	-	-	0.17
Estonia	0.78	0.49	-0.39	0.32	-
Hungary	0.31	0.05	-0.32	-0.22	0.75
Poland (1998-2000)	-	-	-	-	0.83
Slovakia	-	-	-	-	-0.51
Slovenia	0.18	0.35	-0.53	-0.58	-

1) in % of GDP 1995 at NUTS II Level Source: a) AcessLab/RegSpec b) Eurostat NewCronos

Conclusions

In this background report we summarize some data and the literature on regional development in transition. We argue that despite the substantial differences among the transition countries some general tendencies can be found. These are, that:

- Regional disparities have increased dramatically during transition, in particular in the early years.
- Large cities and regions near foreign market potentials experience better development than other regions and that agricultural – peripheral regions have done much worse.
- Regional disparities are highly stable over transition.
- Migration is lower than in most European labor markets and wage flexibility is only slightly higher. Transition economies labor markets may thus be considered as inflexible as the European labor markets.

- Capital mobility is unlikely to act as a substitute for lacking regional migration in reducing regional disparities.

- There is some indication that regions are diverging into two groups: A small group of rather well to do regions (mainly consisting of large cities and border regions) and a larger group of poorer regions.

Furthermore, we also show that aside from these general tendencies there are substantial differences among countries. In particular due to its geography and sheer size regional issues in Russia are incomparable to those in the European Union member states and accession countries. In Russia mono-industrialization of individual territories plays a much more important role than in the European Union member states and candidate countries and differences in regional living conditions are clearly much larger in Russia too.

While this heterogeneity makes us sceptical of drawing too general policy conclusions for transition economies without taking into detailed consideration the national differences, we would argue that there are important policy lessons to be learned from this overview:

- First, we would suggest that the existing regional disparities are to a good deal due to differences in starting conditions among regions and that mechanisms of regional adjustment operate slowly in transition countries. Thus regional problems are long term and may be expected to persist over a longer time period in the future. In consequence any policy, which aims at reducing regional disparities should take a long-run view on regional development in transition countries. The primary focus of such a policy should be in increasing the endowment of the most backward regions with potential factors for regional development. Measures such as infrastructure, human capital and R&D development may be considered the most effective instruments for solving the problems of in particular peripheral regions in transition.

Such a policy, however, should not be expected to yield short term results. Experiences in the European Union suggest that rural development as well as restructuring old industrial areas is a long term project and may yield only limited results in the short term.

An alternative to a policy of regional equalization could be to accept regional disparities as a natural outcome of market processes and to devote attention more to issues of efficiency rather than regional equity. In the end effect such a policy could even imply strengthening the existing growth poles and thus increasing regional disparities. Such a policy would seem particularly tempting in many transition economies since it seems more compatible with the goal of aggregate (nation – wide) growth and

avoids much inefficiency generated by policies of for instance providing subsidies to backward regions.

We would, however, argue that care must be taken to enable residents of more backward regions to benefit from the fruits of increased growth effects in centers through migration if such a policy is envisioned. Given the currently low migration rates in many transition countries it seems likely that this condition is violated. Thus a policy strengthening existing growth poles may be counterproductive by generating excess labor demand in centers, while aggravating unemployment in the periphery.

Thus due to the low internal migration in most candidate countries the classical policy trade off between regional equity and efficiency is more strongly felt in transition. Policy should thus also take measures to remove any barriers to migration in transition economies in order to avoid the "poverty-cum-liquidity" trap (Bornhorst and Commander, 2004) in which residents of more backward regions find themselves now. Such a policy would in all liklelihood have to take a relatively wide view on migration barriers and would need to address housing market inefficiencies (in particular for rental housing), capital market inefficiencies (which may be at the root of liquidity constraints in financing migration) and a range of wider institutional measures.

- Second, given the substantial heterogeneity in regional problems in backward regions which range from lacking infrastructure over low human capital endowments to problems of mono-industrialization, and assuming that equalization of regional living conditions will remain part of the policy goal function for some time in the future, we would also argue that there is a need for differentiating regional policy even within countries, so that it can fit the individual needs of regions. Clearly, this will require at some decentralisation at least in the implementation of regional policy.

Many transition countries, however, - due to the more pressing needs of national reforms and the greater ease with which such reforms can be conducted from the center – have generally devoted few funds to regional policy and little energy into designing efficient for institutional implementation of such a policy or have found themselves in repeated political conflicts with sub-national authorities which delayed development of such institutions (see: Bachtler, 1992, and Dabla Norris et al, 2000 for surveys of regional policy institutions in transition). Thus a regionally differentiated policy may also imply reviewing the institutional setup within which regional policy is conducted in particular in larger transition countries.

- Third, from a labor market perspective our analysis suggests that there may be a strong need for increased co-ordination of instruments of regional and active labor market policies. Regional labor market disparities in the candidate countries are closely associated with long-run structural characteristics of regions and backward regions often suffer from a lack of labor demand. Thus

generating investments and creating new jobs in these regions should have high priority. This is most appropriately addressed in a regional policy framework and cannot easily be addressed by standard active labor market policies or macro-oriented policies (such as reducing benefit entitlements, or employment protection) alone. However, the low mobility of the work force and problems of human capital development which act as impediments to regional development suggest that active labor market policy may have an important role to play in an integrated regional policy package designed to solve regional labor market problems.

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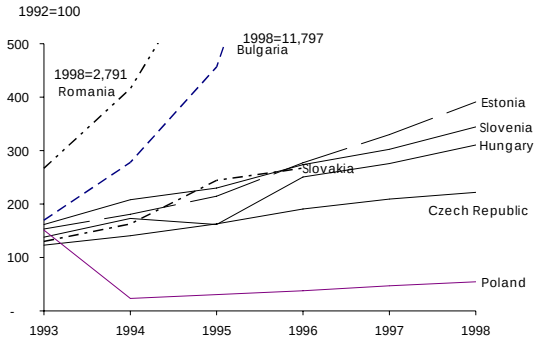
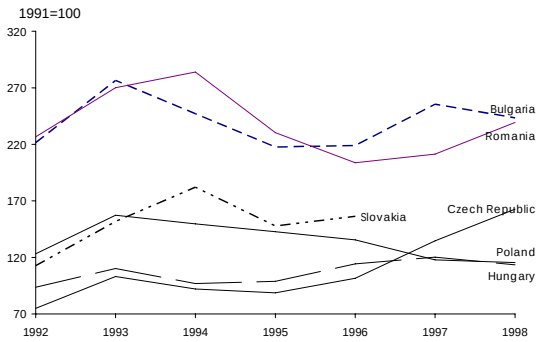
Appendix 1: Standard deviation in Wages and Registered Unemployment rates in transition countries



Wages



Unemployment Rates

Source: Regspec/AcessLab data base.